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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,463	06/25/2001	Hermanus Leonardus Peck	NL 000359	8680

27082 7590 09/21/2004

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EXAMINER

FOURSON III, GEORGE R

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,463	PEEK ET AL	
	Examiner	Art Unit	
	George Fourson	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The finality of the office action mailed 5/19/04 is withdrawn in view of applicant's argument regarding the teaching of Vadasz related to disclosure of LPCVD nitride formation. In view of ordinary usage in the art, the recitation of "low pressure chemical vapor deposition" is now not seen to be commensurate with CVD performed at a pressure less than atmospheric as disclosed by Vadasz.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Tobin et al and Gardner et al and optionally in view of Dyck.

Stevens is applied as stated in the office action mailed 5/19/04. The reference discloses the antiblooming implant to be to be useful in the event that the number of photocarriers generated by the incident radiation exceeds that of the storage capacity of the element, or pixel (col.1, lines 9-14). These excess carriers then spill over, or "bloom", into adjacent photosites thereby degrading the integrity of the image. This is a disclosure that the formation of the antiblooming implant to be preferable as opposed to necessary to produce a useful device and that one of ordinary skill in the art would have had a reasonable expectation of success of producing a useful image sensor by omitting the formation of the antiblooming regions. It would have been within the scope of one of ordinary skill in the art to omit formation of the antiblooming regions 22 and 32 with the expectation that the integrity of the image may be degraded as disclosed by Stevens et al. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as

somewhat inferior to some other product for the same use." In re Gurley, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Even a teaching away from a claimed invention does not render the invention patentable. See Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998), where the court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed." To further clarify, a prior art opinion that a claimed invention is not preferred for a particular limited purpose, does not preclude utility of the invention for that or another purpose, or even preferability of the invention for another purpose. The buried channel implant would then be the only implant of that conductivity type through gate dielectric 13.

In the event that the antiblooming implant is omitted the dosage of the implant forming the buried channel would be adjusted according to the teaching of col.3, line 65 – col.4, line 6.

Alternatively, Dyck et al discloses that CCD image sensors need not contain an antiblooming structure (col.1, lines 45-48). It would have been within the scope of one of ordinary skill in the art to combine the teachings of Stevens and Dyck et al to enable the formation of the image sensor of Stevens et al without formation of antiblooming structure 22 and 32.

Stevens does not disclose use of LPCVD to form the disclosed nitride layer of the gate dielectric. Tobin et al discloses LPCVD nitride as a gate dielectric material (col.1, lines 34-54). Gardner et al discloses LPCVD nitride as a gate dielectric (col.3, lines 20-24). It would have been within the scope of one of ordinary skill in the art to combine the teachings of Stevens with the teachings of either Tobin et al

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or Gardner et al to enable the formation of the nitride layer of the gate dielectric of Stevens to be performed.

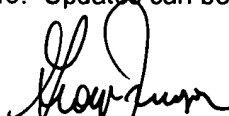
Applicant argues that Stevens does not disclose implantation to form the buried channel through the gate dielectric 13. However, figure 2 shows such a step because the substrate comprises layer 13 (which can be ONO) and the arrows depict an implantation step. Note that layer 13 of figure 1 is the first dielectric layer formed and can remain as a final gate dielectric (col.3, lines 53-56).

Applicant argues that references drawn to gate dielectric formation for a MOSFET are not analogous to Stevens because Stevens is directed to CCD formation. However, the teachings of Tobin et al and Gardner et al are reasonably pertinent to the teachings of Stevens because both are directed to formation of a nitride layer which is used to insulate a gate, which controls a channel by field effect, from the channel.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (571) 272-2800. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (571)272-1860. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571)272-1855. The fax number for this group is (703)872-9306 and the customer service number for group 2800 is 571-272-2815. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.


George Fourson
Primary Examiner
Art Unit 2823

GFourson
September 16, 2004